

IV. AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A homogenizer comprising a thrust hydrodynamic bearing extending along and about a longitudinal axis and including a fixed portion and a disc-shaped agitation rotor disposed longitudinally apart from one another, the agitation rotor having an agitation rotor surface, the fixed portion and the agitation rotor surface opposingly arranged in a face-to-face manner to define a predetermined bearing clearance between the facially-opposing fixed portion and the agitation rotor surface, the fixed portion formed with at least one longitudinally-extending introduction port to introduce a plurality of mutually incompatible raw liquids in a longitudinally-flowing direction toward the agitation ~~motor rotor~~ surface and into the bearing clearance to be mixed and agitated in the bearing clearance by rotation of the agitation rotor; ~~and~~
~~means for applying an external force to the agitation rotor in a direction opposite to the longitudinally-flowing direction, the external force being sufficient to maintain the predetermined bearing clearance constant while the agitation rotor rotates wherein the~~
agitation rotor surface includes a plurality of grooves arranged radially or spirally along a circumferential direction such that, upon rotation of the agitation rotor, the plurality of grooves aspirate the plurality of the mutually incompatible raw liquids from the at least one longitudinally-extending introduction port and into the predetermined bearing clearance and then cause the plurality of the mutually incompatible raw liquids to emulsify while flowing radially outwardly.

2. (Canceled)

3. (Currently Amended) A homogenizer according to ~~claim 2~~ claim 1, wherein the one surface of the agitation rotor which is opposed to the fixed portion is divided into three regions of a center circle region, an intermediate ring region, and an outer ring region,

the homogenizer further comprising: agitation grooves; spiral-shaped pumping grooves; and introduction ports for the plurality of raw liquids,

the agitation grooves being formed radially on any one of the three regions and

extending in a diameter direction,

the pumping grooves being formed on the other two of the three regions for causing the plurality of raw liquids in the bearing clearance to flow into the agitation grooves by the rotation of the rotor,

the introduction ports being formed in the fixed portion at positions opposed to the pumping grooves of the agitation rotor.

4. (Currently Amended) A homogenizer according to ~~any one of claims claim 1 to 3~~, further comprising a pressure release port, the pressure release port communicating with the bearing clearance and operative for adjusting a pressure in the bearing clearance.

5. (New) A homogenizer comprising a housing having a fixed portion, a donut-shaped bearing ring connected internally of the housing and an agitator rotor operable for rotation within the housing, the agitator rotor having a journal portion extending through the donut-shaped bearing ring and a disk-shaped flange portion connected to the journal portion, the disk-shaped flange portion having an agitation rotor surface with an agitation hydrodynamic bearing formed thereon and an annularly-shaped lubrication surface disposed opposite the agitation rotor surface and having a lubrication hydrodynamic bearing formed thereon, the fixed portion and the agitation rotor surface opposingly arranged in a face-to-face manner to define a predetermined bearing clearance between the facially-opposing fixed portion and the agitation rotor surface, the fixed portion formed with at least one longitudinally-extending introduction port to introduce a plurality of mutually incompatible raw liquids in a longitudinally-flowing direction toward the agitation rotor surface and into the bearing clearance to be mixed and agitated in the bearing clearance by rotation of the agitation rotor, the annularly-shaped lubrication surface and the donut-shaped bearing ring opposingly arranged in a face-to-face manner to define a predetermined lubrication bearing clearance between the annularly-shaped lubrication surface and the donut-shaped bearing ring, the housing formed with at least one radially-extending lubrication introduction port to introduce a lubricating fluid in a radially-flowing direction toward the journal portion,

between the journal portion and the donut-shaped bearing ring and into the predetermined lubrication bearing clearance so that the lubrication fluid exits the housing thereafter via a radially-extending lubrication exit port.